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09/757,547	01/10/2001	Kenichi Suzuki	450100-02931	9718

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EXAMINER
ORTIZ, JORGE L

ART UNIT	PAPER NUMBER
2697	6

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/757,547	SUZUKI, KENICHI	
	Examiner	Art Unit	
	Jorge L Ortiz-Criado	2697	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 January 2001* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

In page 18, line 17 "coefficient K" should be "coefficient Kt".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-5 and 11-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Bradshaw et al. U.S. Patent 6,101,157.

Regarding claim 1, Bradshaw et al. discloses an optical disc apparatus (See Fig. 2) comprising:

an optical pickup for irradiating a light beam through a two-focus lens onto a signal recording surface of an optical disc including the signal recording surface where digital data is recorded to be optically readable, and for detecting reflection light thereof (See Figs.1,2);

drive control means for driving and controlling the two-focus lens in an optical axis direction of the light beam (See Fig. 2);

focus error center value measurement means for measuring a focus error center value detected by the optical pickup (See col. 6, lines 36-52; Fig. 2);

focus error signal generation means for generating a focus error signal subjected to balance-adjustment based on the reflection light and a variable coefficient Kf (See col. 2, lines 24 to col. 4, lines 1-41; col. 5, lines 64-67 to col. 6, lines 1-52; Fig.2); and

focus balance control means for causing the drive control means to control a focus balance, based on the focus error center value measured by the focus error center value measurement means, and the focus error signal generated by the focus error signal generation means and subjected to the balance adjustment (See col. 2, lines 24 to col. 4, lines 1-41; col. 5, lines 64-67 to col. 6, lines 1-52; Fig.2).

Regarding claim 2, Bradshaw et al. discloses a focus bias voltage supply means for supplying the drive control means with a focus bias voltage; and focus bias control means for causing the focus bias voltage supply means to supply the drive control means with the focus bias voltage, thereby to cause the drive control means to control a focus bias (See col. 7, lines 13-19).

Regarding claim 3, Bradshaw et al. discloses wherein the two-focus lens forms two focus positions by one single objective lens, corresponding to a plurality of discs having respectively different disc substrate thickness (See col.1, lines 15-40; col. 11, lines 4-9; Fig. 1)

Regarding claim 4, Bradshaw et al. discloses wherein the focus error center value measurement means measures an error center value with the two-focus lens kept sufficiently distant from a just-focus position (See col. 6, lines 34-52; col. 8, lines 19-48; Figs. 1, 3, 4, 5A-5F)

Regarding claim 5, Bradshaw et al. discloses wherein a plurality of values including an initial value used as a reference are set and stored for the coefficient Kf (See col. 8, lines 18-35; Fig. 3-S8)

Regarding claim 11, Bradshaw et al. discloses an optical disc apparatus (See Fig. 2) comprising:

an optical pickup for irradiating a light beam through an objective lens onto a signal recording surface of an optical disc including the signal recording surface where digital data is recorded to be optically readable, and for detecting reflection light thereof (See Fig. 1,2);

focus error signal detection means for detecting a focus error signal, based on the reflection light detected by the optical pickup (See col. 6, lines 36-52; Figs. 1,2);

focus zero-cross detection signal detection means for detecting a focus zero-cross detection signal, based on the focus error signal detected by the focus error signal detection means (See col. 2, lines 24 to col. 4, lines 1-41; col. 5, lines 64-67 to col. 6, lines 1-52; Fig. 1,2); and

drive control means for driving and controlling the objective lens in an optical axis direction of the light beam, wherein, if the objective lens is being driven at a predetermined speed in a direction in which a distance from the optical disc is shortened, the drive control means stops the objective lens moving closer to the optical disc upon elapse of a predetermined time period from when the focus zero-cross detection signal which has been by the focus zero-cross detection signal detection means is not detected any more (See col. 9, lines 7-67 to col. 10 lines 1-56; Fig. 1,2,3,4,5A-5F),

and if the objective lens is being driven after the stopping of the objective lens, in a direction in which the distance from the optical disc is increased, the drive control means controls a focus position of the light beam irradiated from the optical pickup to be focused on the signal recording surface of the optical disc, based on the focus zero-cross detection signal (See col. 9, lines 7-67 to col. 10 lines 1-56; Fig. 1,2,3,4,5A-5F)

Regarding claim 12, Bradshaw et al. discloses wherein if the objective lens is being driven at a predetermined speed in a direction in which a distance from the optical disc is shortened, the drive control means stops the objective lens moving closer to the optical disc upon elapse of a predetermined time period from when the focus zero-cross detection signal which has been detected by the focus zero-cross detection signal detection means is not detected any more (See col. 9, lines 7-67 to col. 10 lines 1-56; Fig. 1,2,3,4,5A-5F),

and if the objective lens is being driven after the objective lens is sopped for a predetermined time, in a direction in which the distance from the optical disc is increased, the drive control means controls a focus position of the light beam irradiated from the optical pickup to be focused on the signal recording surface of the optical disc, based on the focus zero-cross detection signal (See col. 9, lines 7-67 to col. 10 lines 1-56; Fig. 1,2,3,4,5A-5F).

Regarding claim 13, Bradshaw et al. discloses wherein the objective lens is the two-focus lens which forms two focus positions in an optical axis direction by one single objective lens, corresponding to a plurality of discs having respectively different disc substrate thickness (See col.1, lines 15-40; col. 11, lines 4-9; Fig. 1).

Regarding claim 14, Bradshaw et al. discloses an optical disc apparatus (See Fig. 2) comprising:

an optical pickup for irradiating a light beam through an objective lens onto a signal recording surface of an optical disc including the signal recording surface where digital data is recorded to be optically readable, and for detecting reflection light thereof (See Fig. 1,2);

pull-in signal detection means for detecting a pull-in signal, based on a total light amount of the reflection light detected by the optical pickup (See col. 9, lines 7-67 to col. 10 lines 1-56; Fig. 1,2,3,4,5A-5F);

FOK signal detection means for detecting an FOK signal, based on the pull-in signal detected by the pull-in signal detection means (See col. 9, lines 7-67 to col. 10 lines 1-56; Fig. 1,2,3,4,5A-5F); and

drive control means for driving and controlling the objective lens in an optical axis direction of the light beam, wherein, if the objective lens is being driven at a predetermined speed in a direction in which a distance from the optical disc is shortened, the drive control means stops the objective lens moving closer to the optical disc upon elapse of a predetermined time period from when the FOK signal which has been by the FOK signal detection means is not detected any more (See col. 9, lines 7-67 to col. 10 lines 1-56; Fig. 1,2,3,4,5A-5F),

and if the objective lens is being driven after the stopping of the objective lens, in a direction in which the distance from the optical disc is increased, the drive control means controls a focus position of the light beam irradiated from the optical pickup to be focused on the signal recording surface of the optical disc, based on the FOK signal (See col. 9, lines 7-67 to col. 10 lines 1-56; Fig. 1,2,3,4,5A-5F).

Regarding claim 15, Bradshaw et al. discloses wherein if the objective lens is being driven at a predetermined speed in a direction in which a distance from the optical disc is shortened, the drive control means stops the objective lens moving closer to the optical disc

upon elapse of a predetermined time period from when the FOK signal which has been detected by the FOK signal detection means is not detected any more (See col. 9, lines 7-67 to col. 10 lines 1-56; Fig. 1,2,3,4,5A-5F),

and if the objective lens is being driven after the objective lens is sopped for a predetermined time in a direction in which the distance from the optical disc is increased, the drive control means controls a focus position of the light beam irradiated from the optical pickup to be focused on the signal recording surface of the optical disc, based on the FOK signal (See col. 9, lines 7-67 to col. 10 lines 1-56; Fig. 1,2,3,4,5A-5F).

Regarding claim 16, Bradshaw et al. discloses wherein the objective lens is a two-focus lens, which forms two focus positions in an optical axis direction by one single objective lens, corresponding to a plurality of discs having respectively different disc substrate thickness (See col.1, lines 15-40; col. 11, lines 4-9; Fig. 1).

Regarding claim 17, Bradshaw et al. discloses an optical disc apparatus (See Fig. 2) comprising:

an optical pickup for irradiating a light beam through an objective lens onto a signal recording surface of an optical disc including the signal recording surface where digital data is recorded to be optically readable, and for detecting reflection light thereof (See Fig. 1,2);

focus error signal detection means for detecting a focus error signal, based on the reflection light detected by the optical pickup (See col. 2, lines 24 to col. 4, lines 1-41; col. 5, lines 64-67 to col. 6, lines 1-52; Fig.2);

focus zero-cross detection signal detection means for detecting a focus zero-cross detection signal, based on the focus error signal detected by the focus error signal detection means; pull-in signal detection means for detecting a pull-in signal, based on a total light amount of the reflection light detected by the optical pickup (See col. 9, lines 7-67 to col. 10 lines 1-56; Fig. 1,2,3,4,5A-5F);

FOK signal detection means for detecting an FOK signal, based on the pull-in signal detected by the pull-in signal detection means (See col. 9, lines 7-67 to col. 10 lines 1-56; Fig. 1,2,3,4,5A-5F); and

drive control means for driving and controlling the objective lens in an optical axis direction of the light beam, wherein, if the objective lens is being driven at a predetermined speed in a direction in which a distance from the optical disc is shortened, the drive control means stops the objective lens moving closer to the optical disc upon elapse of a predetermined time period from when the focus zero-cross detection signal which has been by the focus zero-cross detection signal detection means or the FOK signal which has been detected by the FOK signal detection means is not detected any more (See col. 9, lines 7-67 to col. 10 lines 1-56; Fig. 1,2,3,4,5A-5F),

and if the objective lens is being driven after the stopping of the objective lens, in a direction in which the distance from the optical disc is increased, the drive control means controls a focus position of the light beam irradiated from the optical pickup to be focused on the signal recording surface of the optical disc, based on the focus zero-cross detection signal and the FOK signal (See col. 9, lines 7-67 to col. 10 lines 1-56; Fig. 1,2,3,4,5A-5F).

Regarding claim 18, Bradshaw et al. discloses wherein if the objective lens is being driven at a predetermined speed in a direction in which a distance from the optical disc is shortened, the drive control means stops the objective lens moving closer to the optical disc upon elapse of a predetermined time period from when the focus zero-cross detection signal which has been detected by the focus zero-cross detection signal detection means or the FOK signal which has been detected by the FOK signal detection means is not detected any more (See col. 9, lines 7-67 to col. 10 lines 1-56; Fig. 1,2,3,4,5A-5F),

and if the objective lens is being driven after the objective lens is sopped for a predetermined time, in a direction in which the distance from the optical disc is increased, the drive control means controls a focus position of the light beam irradiated from the optical pickup to be focused on the signal recording surface of the optical disc, based on the focus zero-cross detection signal and the FOK signal (See col. 9, lines 7-67 to col. 10 lines 1-56; Fig. 1,2,3,4,5A-5F).

Regarding claim 19, Bradshaw et al. discloses wherein the objective lens is a two-focus lens, which forms two focus positions in an optical axis direction, corresponding to a plurality of discs having respectively different disc substrate thickness, by one single objective lens (See col.1, lines 15-40; col. 11, lines 4-9; Fig. 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bradshaw et al. U.S. Patent 6,101,157.in view of Takeya et al. U.S. Patent No. 6,240,054.

Regarding claim 6, Bradshaw et al. discloses an optical disc apparatus (See Fig. 1,2) comprising:

an optical pickup for irradiating a light beam through a two-focus lens onto a signal recording surface of an optical disc including the signal recording surface where digital data is recorded to be optically readable, and for detecting reflection light thereof (See Fig. 1,2);

drive control means for driving and controlling the two-focus lens in a radial direction of the optical disc (See col. 6, lines 16-27);

tracking error signal generation means for generating a tracking error signal subjected to balance-adjustment based on the reflection light (See col. 6, lines 16-27)

Bradshaw et al. further fails to teach or suggest a tracking error center value measurement means for measuring a tracking error center value detected by the optical pickup, a balance-adjustment based on a variable coefficient Kt;

and tracking balance control means for causing the drive control means to control a tracking balance, based on the tracking error center value measured by the tracking error

center value measurement means, and the tracking error signal generated by the tracking error signal generation means and subjected to the balance adjustment.

However this feature its well known in the art as evidenced by Takeya et al. which discloses a tracking error center value measurement means for measuring a tracking error center value detected by the optical pickup, a balance-adjustment based on a variable coefficient Kt; and tracking balance control means for causing the drive control means to control a tracking balance, based on the tracking error center value measured by the tracking error center value measurement means, and the tracking error signal generated by the tracking error signal generation means and subjected to the balance adjustment (See col. 39 – 67 to col. 40, lines 16-45; Fig. 26)

Therefore it would have been obvious to one ordinary skill in the art at the time of the invention to include a tracking error center value measurement means for measuring a tracking error center value detected by the optical pickup, a balance-adjustment based on a variable coefficient Kt; and tracking balance control means for causing the drive control means to control a tracking balance, based on the tracking error center value measured by the tracking error center value measurement means, and the tracking error signal generated by the tracking error signal generation means and subjected to the balance adjustment in order to perform the focus control and the tracking control that are appropriate for a plurality of discs having respectively different substrate thickness such as DVD and CD, as teaches by Takeya et al.

Regarding claim 8, Bradshaw et al. further discloses wherein the two-focus lens forms two focus positions by one single objective lens, corresponding to a plurality of discs having respectively different disc substrate thickness (See col.1, lines 15-40; col. 11, lines 4-9; Fig. 1).

Regarding claim 9, Takeya et al. further discloses wherein the tracking error center value measurement means measures an error center value with the two-focus lens kept sufficiently distant from a just-focus position (See col. 39 –67 to col. 40, lines 16-45; Fig. 26,27).

Regarding clam 10, Takeya et al. further discloses wherein a plurality of values including an initial value used as a reference are set and stored for the coefficient Kt (See col. 39 –67 to col. 40, lines 16-45; Fig. 26,27).

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bradshaw et al. U.S. Patent 6,101,157.in view of Takeya et al. U.S. Patent No. 6,240,054 as applied to claim 6 above, and further in view of Tanaka et al. U.S. Patent No. 6,522,606.

Bradshaw et al. in combination with Takeya et al. fails to disclose a tracking bias voltage supply means for supplying the drive control means with a tracking bias voltage; and tracking bias control means for causing the tracking bias voltage supply means to supply the

drive control means with the tracking bias voltage, thereby to cause the drive control means to control a tracking bias.

However this feature is well known in the art as evidenced by Tanaka et al., which discloses a tracking bias voltage supply means for supplying the drive control means with a tracking bias voltage; and tracking bias control means for causing the tracking bias voltage supply means to supply the drive control means with the tracking bias voltage, thereby to cause the drive control means to control a tracking bias (See Abstract; col. 3, lines 25-60) Fig. 3,4,9)

Therefor it would have been obvious to one ordinary skill in the art at the time of the invention to include discloses a tracking bias voltage supply means for supplying the drive control means with a tracking bias voltage; and tracking bias control means for causing the tracking bias voltage supply means to supply the drive control means with the tracking bias voltage, thereby to cause the drive control means to control a tracking bias in order to avoid reduce operation speed as teaches by Tanaka et al.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to apparatus and method for focusing and tracking.

   a. U.S. Patent No. 5,414,681 to Ida et al., which discloses a focusing search circuit and focusing servo circuit for an optical disk apparatus.

b. U.S. Patent No. 5,463,602 to Oka et al., which discloses a reproducing apparatus, which can play multiple types of discs and biases focusing error signal based on disc type.

c. U.S. Patent No. 5,633,846 to Okuyama et al., which discloses a positioning optical disc apparatus.

d. U.S. Patent No. 5,859,824 to Izumi et al., which discloses a digital disk player with a servo gain control to reproduce different substrates disk thickness.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jorge L Ortiz-Criado whose telephone number is (703) 305-8323. The examiner can normally be reached on Mon.-Thu.(8:30 am - 6:00 pm),Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, HOFSASS R JEFFERY can be reached on (703) 305-4717. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-6743 for regular communications and (703) 308-6743 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

joc
June 13, 2003

Richemond Dorvil
Primary Examiner